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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/599,347

Filing Date: September 26, 2006

Appellant(s): KUIPER ET AL.

Michael A. Scutaro
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 01/04/2010 and 02/16/2010 appealing from the Office action mailed 08/04/2009.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 1-20.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

P.C.T. Publication No. WO02/099527 to Prins et al., (Dec 12, 2002)

P.C.T. Publication No. WO03069380 to Feenstra et al., (Aug 21, 2003)

U.S. Patent Application Publication 2002/0176148 to Onuki et al, (Nov 28, 2002)

4,701,021 Le Pesant et al. 10-1987

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8, 15, 16 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prins et al. WO02/099527 in view of Le Pesant et al. U.S. Patent No. 4,701,021.

As per claim 1, Prins et al. discloses a switchable optical unit capable of controlling an external beam of radiation passing through an optically active portion of the unit, wherein the optically active portion comprises a region through which the beam of radiation passes, which unit comprises a chamber and an electrically conductive liquid (4) contained in the chamber, the chamber being provided with an electrode configuration wherein application of a voltage (V), from a voltage control system to electrodes causes movement of the said liquid, characterized in

that the electrode configuration comprises at least one first electrode (5) fixed to the inner walls of the chamber at the position of the optically active portion, second electrode means (6) fixed to the inner walls of the chamber at positions outside the optically active portion and a third electrode (7) in contact with the conductive liquid and continuously connected to a first output of a voltage source (V of 0V), a second output of which is connected in a first mode to said at least one first electrode (V of 0V) and in a second mode to the second electrode means (V=V); (see Figs. 1a, 1b and 3a, 3b).

Prins et al. does not expressly disclose the arrangement where the beam of radiation passes through the switchable optical unit and that in that wherein in a first mode, the electrically conductive liquid fills the chamber inside the optically active portion, and wherein in a second mode, the electrically conductive liquid fills the chamber outside of the optically active portion, having a chamber and an electrically conductive liquid contained in the chamber, the chamber being provided with electrodes configuration wherein application of a voltage (V), from a voltage control system to electrodes causes movement of the said liquid, (see Figs. 1-4).

However, this arrangement in an optical switching unit is known in the art as evidenced by Le Pesant et al. which discloses an optical switching unit capable of controlling a external beam of radiation passing through an optically active portion of the unit the beam of radiation passes through the switchable optical unit and that in that wherein in a first mode, the electrically conductive liquid fills the chamber inside the optically active portion, and wherein in a second mode, the electrically conductive liquid fills the chamber outside of the optically active portion.

Therefore, it would have been obvious to one of an ordinary skill in the art at the time of the invention to arrange the optical switchable unit having configured so that where the beam of radiation passes through the switchable optical unit and that the electrically conductive liquid fills the chamber inside the optically active portion and fills the chamber outside of the optically active portion in the switching operation modes, providing for arrangement of an optical modulator switching element employing displacement and modification of refraction of the light in the a light path, as taught by Le Pesant et al.

The combination outlined above further shows the following limitations of the corresponding claims as follow:

As per claim 2, refer to figure 3a of Prins et al. which discloses dotted lines of electrode 6, form alternatively an u-shaped cross section.

As per claim 3, Prins et al. discloses wherein the second electrode means (6) includes one flat annular electrode, refers to the figures 1 and 3.

As per claim 4, Prins et al. discloses wherein the interior wall of the chamber facing the liquid is coated with an insulating hydrophobic layer (2) (see page “fluoropolymer”; page 3 line 11).

As per claim 5, Prins et al. discloses wherein the chamber comprises a medium (3) which has an index of refraction different from that of the conductive liquid (Figs. 1,3; description page 2-3).

As per claims 6 and 7, Prins et al. discloses wherein the medium is a liquid, and as in claim wherein is a gas description page 2-3.

As per claim 8, It is readily understood that if gas is being used a vacuum environment is inherently provided.

As per claim 15, Prins et al. discloses where the voltage control system is arranged to supply a voltage to the at least one of first electrode individually (see Fig. 1).

As per claim 16, finding the index of refraction with respect to its surroundings would have been merely routine skill in the art in the combination which would have understood that they can be freely chosen and adapted to the envisaged application.

As per claim 19, Prins et al. discloses wherein at least one chamber wall situated in the optically active portion includes a planar surface (see Fig. 3).

As per claim 20, Prins et al. discloses wherein each of two opposite chamber walls situated in the optically active portion includes a planar surface (see Fig. 3).

Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prins et al. WO02/099527 in combination with Le Pesant et al. U.S. Patent No. 4,701,021 and further in view of Feenstra et al. WO03069380.

Claim 9-11 provides for having refractive lens surface, on the walls of the chambers and particularly an aspherical surface.

These features are not taught by the combination above of the switchable optical unit.

However, such configuration is well known in the art and is evidenced by Feenstra et al., see Fig. 4, a switchable optical unit having refractive lens surfaces particularly aspherical.

It would have been obvious to one of an ordinary skill in the art at the time of the invention to provide such refractive lens surface in order to provide for a variable focus device.

Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prins et al. by WO02/099527 in combination with Le Pesant et al. U.S. Patent No. 4,701,021 and further in view of Onuki et al. US Patent Application Publication 2002/0176148.

Although the combination above does not expressly disclose a controllable lens system in a camera/hand-held device having a switchable optical unit.

This is merely one of the well known applications for such optical switchable units, as evidenced by Onuki et al.

It would have been obvious to one of an ordinary skill in the art to provide such optical system units to obtain at very least light beam change capabilities.

(10) Response to Argument

(1) Appellant argues that Le Pesant cannot teach the recitation of claim 1 “*wherein in a first mode, the electrically conductive liquid fills the chamber inside the optically active portion, and wherein in a second mode, the electrically conductive liquid fills the chamber outside of the optically active portion*”.

It is noted that the examiner is not relying on Le Pesant to disclose the electro-wetting principle, where the electrically conductive liquid distribution is switched between modes, instead the examiner is relying on Prins et al.

Prins et al. disclose the arrangement where the beam of radiation in the switchable optical unit in that wherein in a first mode, the electrically conductive liquid (4) fills the chamber inside the optically active portion as for example described and shown with respect to Fig. 3b, and wherein in a second mode, the electrically conductive liquid fills the chamber outside of the optically active portion as shown with respect to Fig. 3a. In such first mode the electro conductive liquid (4), fills the chamber at the portion where the external beam 14 and 14' path is active and is clearly illustrated in Figs. 3b, where the external beam is absorbed by the electrically conductive liquid 4. In a second mode, the electrically conductive liquid (4) fills a chamber outside the portion where the external beam 14 and 14' path is active, as shown in Fig. 3a, where clearly is illustrated that the external beam 14/14' is actively reflected by element 12/12' and liquid (3), while the electro conductive liquid (4) stays outside such chamber portion.

In response to all the appellant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. And in this case, the combination of Prins et al and Le Pesant et al.

discloses wherein in a first mode, the electrically conductive liquid fills the chamber inside the optically active portion, and wherein in a second mode, the electrically conductive liquid fills the chamber outside of the optically active portion as claimed, and the examiner cannot find Appellant argument compelling.

Appellant argues that Le Pesant does not disclose the use of electro conductive liquids and does not operate according to the electro-wetting principle.

Again, the examiner is not relying on Le Pesant to disclose the electro-wetting principle, where the electrically conductive liquid distribution is switched between modes, instead the examiner relying on Prins et al, where expressly discloses that liquid (4) is electrically conductive fluid.

As outlined in the office action rejections what Prins et al. do not expressly disclose is the arrangement or configuration where the beam of radiation passes through the switchable optical unit.

Where the examiner is relying in Le Pesant to teach such a configuration where an arrangement in an optical switching unit capable of controlling an external beam of radiation passing through an optically active portion of the unit and the beam of radiation passes through the switchable optical unit and that in that wherein in a first mode, a liquid, which is electrically conductive liquid, fills the chamber inside the optically active portion, and wherein in a second mode, the liquid fills the chamber outside of the optically active portion. In that a first mode, the liquid fills the chamber inside the optically active portion, and wherein in a second mode, the

liquid fills the chamber outside of the optically active portion, having a chamber and an liquid contained in the chamber, the chamber being provided with electrodes configuration wherein similarly application of a voltage (V), from a voltage control system to electrodes causes movement of the said liquid, (see Figs. 1-4), filling the chambers inside or outside the optically active portions.

One of an ordinary skill in the art at the time of the invention would have been motivated to arrange or configure the optical switchable unit having such beam of radiation passing through the switchable optical unit and/or absorbed/blocking, where the electrically conductive liquid fills the chamber inside the optically active portion and fills the chamber outside of the optically active portion in the switching operation modes. The results of the combiantion would have been predictable and resulted in modifying the invetion of Prins et al. to rearrange the electrodes configurations obtaining an optical modulator switching element employing displacement and modification of refraction of the light in the a active light path where the light passes through.

The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

The examiner cannot concur the obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the

knowledge generally available to one of ordinary skill in the art and KSR forecloses the argument that a specific teaching, suggestion, or motivation is required to support a finding of obviousness. Ex parte Smith, USPQ2d, slip op. at 20, (Bd, Pat. App. & Interf. June 25, 2007) (citing KSR, 82 USPQ2d at 1396).

(11) Related Proceeding(s) Appendix

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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